ABSTRACT OF THE DISCLOSURE

The invention relates to a fabrication method of Ge-Mn magnetic semiconductor with a high Curie temperature. To date, most of researches in magnetic semiconductor are constrained to the magnetic semiconductors from group II-VI and group III-V.

However, a new range of semiconductors from group IV has been recently added. Especially, Ge based semiconductors are attracting a significant attention. These magnetic semiconductors have very low Curie temperatures whose maximum is around 116 K. The low Curie temperature is a major stumbling block for commercial development. The exact reason for the low Curie temperature is not known, however, this is probably due to the low content of Mn.

In order to resolve this problem, the present invention utilizes the thermal evaporation method to fabricate amorphous Ge-Mn alloys. As a result, a large amount of Mn is made solid soluble in Ge without any precipitation. Also, a relatively high Curie temperature of 250 K is obtained. This method is expected to be used as the essential element in the development of spin electronic devices

KEY WORDS

Magnetic semiconductor, Curie Temperature, Amorphous Ge-Mn alloy, Spin electronic device